D0RunII installation

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This is a reformatted version of the text file at:
http://www-d0.fnal.gov/d0dist/dist/releases/t02.08.00/ups/INSTALL.txt

D0RunII is now packaged in, effectively, four pieces for each version. Each of these are downloaded independently. All of them use upd to do the installations. So they require that you already have ups/upd installed as well as at least the dummy "/d0dist/dist/" ups area and that you have "setup upd".

In the following
<...> is a value that you must provide.
[...] is an optional value.

The four parts and the commands needed to perform the downloads are:

a) the skeleton (D0RunII -q dist)

upd list -h www-d0.fnal.gov -aK+ D0RunII -q dist | sort
to see what's available

upd install -h www-d0.fnal.gov D0RunII <version> -q dist

b) the release binaries (5-6GB each at the moment) (D0RunII-bin)

upd list -h www-d0.fnal.gov -aK+ D0RunII-bin <version>
to see what's available

upd install D0RunII-bin <version> -q <qual>

c) the source code areas (the packages)

setup D0RunII <version> -q dist
${SRT_PUBLIC_CONTEXT}/D0reltools/fetchpkgs.sh

d) the external products

${SRT_PUBLIC_CONTEXT}/D0reltools/D0-glpkgs-chk.sh
to see what is needed

upd install .... to install them one by one

or

${SRT_PUBLIC_CONTEXT}/D0reltools/fetchprod.sh
to try to download all of them, unconditionally.

NOTE: a) *must* be done first. The others can be done in any order. At the conclusion of the download, instructions are printed for the next steps.

NOTE: a) You need to cut and paste a "ups declare" to do the ups declaration that people will actually use.

NOTE: c) d) In order to do the c) and d), you must "setup" this version of D0RunII. But since the packages aren't there yet, you can't setup the normal one. So you need to "setup D0RunII <version> -q dist". This is the *only* time that you'll ever use this one.

An example session:

a) Download Skeleton "D0RunII -q dist"
> setup upd
> upd list -h www-d0.fnal.gov -aK+ D0RunII -q dist | sort
"D0RunII" "p08.13.00" "NULL" "dist" ""
"D0RunII" "p09.10.00" "NULL" "dist" ""
"D0RunII" "p10.14.00" "NULL" "dist" ""
"D0RunII" "p10.14.01" "NULL" "dist" ""
"D0RunII" "p10.15.01" "NULL" "dist" ""
"D0RunII" "p11.01.00" "NULL" "dist" ""
"D0RunII" "p11.02.00" "NULL" "dist" ""
"D0RunII" "t02.07.00" "NULL" "dist" ""
"D0RunII" "t02.08.00" "NULL" "dist" ""

The "NULL" item is the flavor. D0RunII (as opposed to D0RunII-bin) has no flavor. The skeletin will work on any platform.

> upd install -h www-d0.fnal.gov D0RunII t02.08.00 -q dist
****
**** To configure D0RunII t02.08.00 the following commands
ups declare D0RunII t02.08.00 -z /d0dist/dist/upsdb -m D0RunII.table -f
NULL -r /d0dist/dist/releases/t02.08.00
**** To fetch the source code packages from www-d0.fnal.gov:
setup D0RunII t02.08.00 -q dist
${SRT_PUBLIC_CONTEXT}/D0reltools/fetchpkgs.sh
**** To fetch the external products from www-d0.fnal.gov or
fnkits.fnal.gov:
${SRT_PUBLIC_CONTEXT}/D0reltools/fetchprod.sh
****

Cut and paste the "ups declare" to do the declaration that people will actually use.

> ups declare D0RunII t02.08.00 -z /d0dist/dist/upsdb -m D0RunII.table -f
NULL -r /d0dist/dist/releases/t02.08.00

b) Download binaries
> upd list -h www-d0.fnal.gov -aK+ D0RunII-bin t02.08.00
"D0RunII-bin" "t02.08.00" "IRIX+6" "IRIX6.5-KCC_4_0" ""
"D0RunII-bin" "t02.08.00" "IRIX+6" "IRIX6.5-KCC_4_0-maxopt" ""
"D0RunII-bin" "t02.08.00" "Linux+2.2" "Linux2.2-KCC_4_0" ""
"D0RunII-bin" "t02.08.00" "Linux+2.2" "Linux2.2-KCC_4_0-maxopt" ""
"D0RunII-bin" "t02.08.00" "Linux+2.4" "Linux2.4-KCC_4_0" ""
"D0RunII-bin" "t02.08.00" "Linux+2.4" "Linux2.4-KCC_4_0-maxopt" ""

Not all of these will be there for all releases. In particular, "maxopt" isn't there for most "t" releases and Linux+2.2 versions will be going away as soon as we can get everyone converted to Linux+2.4 (RedHat 7.x)

NOTE: Each of these require 5-8GB of disk space.
NOTE: They can all coexist with each other on the same disk.

> ups install -h www-d0.fnal.gov D0RunII-bin t02.08.00 -q Linux2.4-KCC_4_0

c) and d) *Cut and paste the "setup D0RunII ... -q dist" to define some variables needed by the "fetch.." scripts.*

> setup D0RunII t02.08.00 -q dist
**** setup D0RunII t02.08.00
**** setting up this section should ONLY done during the installation process!
****

NOTE: this is the only *time you'll every "setup ... -q dist". It's needed here only because the packages needed for the normal one haven't been downloaded yet.*

c) *Execute* fetchpkgs.sh *to pull down all the packages needed by the release. It will only download those needed. It can be run several times. In fact its a good idea to run it at least twice. If there is a problem where some package isn't fully installed, the second run will find it and advise you how to cleanup the problem. Then a third run will install it. If everything is installed correctly, the program will only check consistency. It will not do anything over the network, so is reasonably quick.*

You should see a series of messages like:

informational: installed ScriptRunner v00-07-15.
upd install succeeded.

You may see something like:

***** problem, package area exists without being declared to ups
    You should problably:
      rm -rf /d0dist/dist/packages/ScriptRunner/v00-07-15
    then rerun fetchpkgs.sh
****

This would have been caused by an earlier incomplete installation. Cut and paste the "rm" and rerun fetchpkgs.sh.

You may see something like:

***** problem, package is declared to ups without being in the packages area
    You should problably:
      ups undeclare ScriptRunner v00-07-15
    we will attempt to install it anyway
****

This would indicate that the package was deleted incorrectly. This will never happen during the downloads. Cut and paste the undeclare and rerun.

Good practice would be to run the script one last time just to check the packages' installations. If you get no printout at all, then everything is OK, as far as the sript can tell.

d) *download external products. There are two ways to do this, one by one, giving yourself a chance to make necessary decisions or unconditionally using* fetchprod.sh.

NOTE: fetchprod.sh *is a bit dangerous but is provided because of repeated requests. There are several reasons for this:*

a) *it is* very *easy to miss important failure messages.*
b) *there are sometimes special instructions that are issued. These are very easy to miss in a long download.*
c) sometimes the operator has to make decisions between downloads.

i) one by one:

> D0-glpkgs-chk.sh
will print out something like:

```
      #Misc, compilers tools
**** OK whod0 v1_0
**** OK kai v4_0f
????   python v2_1a
**** OK python v2_1
**** OK perl v5_004
????   swig v1_1p5a
**** OK swig v1_1p5
**** OK gtools v2_3
**** OK groff v1_09c
**** OK docpp v1_0

      #Code libraries
**** OK cern 2000
????   procor v1_4
????   jetnet v3_4
**** OK zlib v1_1_2
**** OK readline v4_0
```

"**** OK " *indicates that the product exists on your node.*
"???? " *indicates that you don't have this version of this product.*
*The latter is *NOT* necessarily bad however. See "swig" above:*
  swig v1_1p5a *is available only for IRIX.*
  swig v1_1p5 *is the Linux version, and we have that. We only need one of each product.*

In addition, you may not need all of them. If you don't care about using the viusualization packages, or the Monte Carlo generators, you won't need them, so you don't have to download them.

Once you've decided that you need one or more of the packages, cut and paste the package/version/qualifier from the above list into:
  upd list -h www-d0.fnal.gov -aK+ <pkg> <ver> [<qual>] | sort
If the package isn't there (no output) or your flavor isn't there,
  upd list -aK+ <pkg> <ver> [<qual>]
to check on fnkits.fnal.gov.

If it isn't at either site, make sure that you are trying to get the right one. That is, if there are two listed (ala swig above) try the other one first. If none of the versions listed are available this is a problem. Notify me at
"d0-release-mgr@fnal.gov".

ii) ***unconditionally:***

> fetchprod.sh

The printout below was done on a machine which is missing many of the products, and several of them don't exist anywhere for that flavor (OSF1). In addition, I did not have write access to the database from the account I was using. So this shows just about everything that can go wrong, except for an network transfer error.

My anotations are surrounded by "======"

> ${SRT_PUBLIC_CONTEXT}/D0reltools/fetchprod.sh
#Misc, compilers tools
ok   whod0 v1_0
ok   kai v4_0f
-- package python v2_1a does not exist at www-d0.fnal.gov
-- package python v2_1a does not exist at fnkits.fnal.gov
======
v2_1a is IRIX only.
======
ok   python v2_1
ok   perl v5_004
-- package swig v1_1p5a does not exist at www-d0.fnal.gov
-- package swig v1_1p5a does not exist at fnkits.fnal.gov
======
IRIX only.
======
ok   swig v1_1p5
ok   gtools v2_3
ok   groff v1_09c
ok   docpp v1_0

#Code libraries
ok   cern 2000
-- package procor v1_4 does not exist at www-d0.fnal.gov
-- package procor v1_4 does not exist at fnkits.fnal.gov
-- package jetnet v3_4 does not exist at www-d0.fnal.gov
** fetch jetnet v3_4 from fnkits.fnal.gov

unable to make directory /usr/products/gtools/OSF1-V4/v2_4b: No such file or directory
upd install failed.
======
No write access.
======
ok   zlib v1_1_2
ok   readline v4_0

#Physics analysis
-- package root v3_02_07c -q KCC_4_0:exception:opt:thread does not exist at www-d0.fnal.gov
-- package root v3_02_07c -q KCC_4_0:exception:opt:thread does not exist at fnkits.fnal.gov
======
No OSF1 version exists.
======

#General Data files
ok   TestData v00-01-20
ok   MagField v00-01-00

#Online tools and libraries
ok   ace v5_1_17
ok   pyxml v0_6_6a
ok   xerces v1_5_1

#MonteCarlo
ok   stdhep v4_10
-- package geant v3_21_13 does not exist at www-d0.fnal.gov
** fetch geant v3_21_13 from fnkits.fnal.gov
informational: cernsource 2000 already exists on local node, skipping.
informational: cern 2000 already exists on local node, skipping.
unable to make directory /usr/products/geant/OSF1-V4/v3_21_13: No such file or directory
upd install failed.

======
No write access
But note the "informational:" messages. Geant "depends" on cern 2000 which depends on cernsource 2000. Both of those already exist, so installation is skipped.
======
-- package lund v6_202 does not exist at www-d0.fnal.gov
** fetch lund v6_202 from fnkits.fnal.gov
unable to make directory /usr/products/lund/OSF1-V4/v6_202: No such file or directory
upd install failed.
======
No write access
======
-- package tauola v2_5_03a does not exist at www-d0.fnal.gov
-- package tauola v2_5_03a does not exist at fnkits.fnal.gov
-- package tauola v2_5_03 does not exist at www-d0.fnal.gov
-- package tauola v2_5_03 does not exist at fnkits.fnal.gov
======
No OSF1 version of either alternatives exist.
======
ok   qq v9_2b
ok   qq v9_2a
-- package herwig v6_202 does not exist at www-d0.fnal.gov
** fetch herwig v6_202 from fnkits.fnal.gov
informational: isajet v7_51a already exists on local node, skipping.
unable to make directory /usr/products/gtools/OSF1-V4/v2_4b: No such file or directory
upd install failed.
======
No write access
======

etc.....